Name:

at1113exam: Expand, factor, and solve quadratics (v335)

1. Solve the equation.

$$(3x - 5)(4x + 7) = 0$$

$x = \frac{5}{3}$ $x = \frac{-7}{4}$

2. Expand the following expression into standard form.

$$(7x + 4)(7x - 4)$$

$49x^2 - 28x + 28x - 16$

$49x^2 - 16$

3. Expand the following expression into standard form.

$$(2x + 5)(9x - 8)$$

$18x^2 - 16x + 45x - 40$

$18x^2 + 29x - 40$

4. Expand the following expression into standard form.

$$(5x + 4)^2$$

$25x^2 + 20x + 20x + 16$

$25x^2 + 40x + 16$

5. Solve the equation.

$$10x^2 + 51x - 19 \;=\; 3x^2 + 4x - 5$$

$$7x^2 + 47x - 14 = 0$$
$$(7x - 2)(x + 7) = 0$$
$$x = \frac{2}{7} \qquad x = -7$$

6. Factor the expression.

$$x^2 - 14x + 48$$

$$(x - 8)(x - 6)$$

7. Factor the expression.

$$64x^2 - 49$$

$$(8x + 7)(8x - 7)$$

8. Solve the equation with factoring by grouping.

$$20x^2 + 15x + 8x + 6 \;=\; 0$$

$$(5x + 2)(4x + 3) = 0$$
$$x = \frac{-2}{5} \qquad x = \frac{-3}{4}$$